

USAMMDA INFORMATION PAPER

PRODUCT: ROTARY VALVE PRESSURE SWING OXYGEN GENERATOR

DESCRIPTION: The Rotary Valve Pressure Swing Oxygen Generator (RVPSOG) is designed to replace the "D" cylinder for patient care and transport. The RVPSOG is a substantial simplification of existing pressure swing adsorption oxygen generator technology. The use of a rotary valve, driven directly by a small motor, eliminates complex valve and control systems used in conventional oxygen generators. Taking advantage of the reduced complexity reduces the weight and size of the oxygen generator and increases the efficiency of the generation process. This project will develop a portable device to meet the combat developers requirements for a point-of-use oxygen generator.

PROGRAM RELEVANCE to the ARMY: This product supports both the core mission of the Army and the Army Transformation. Of the Army's core competencies, this product supports "Forcible Entry Operations," "Sustained Land Dominance," and "Support of Civil Authorities." Oxygen is a key element in the resuscitation of combat casualties. The RVPSOG will reduce the medical footprint, both during initial entry and during re-supply, by eliminating the need to supply one 150-pound oxygen cylinder per day for each patient requiring oxygen. This product supports Future Operational Capabilities: MD-02-001 Clearing the Battlefield and MD-02-002 Hospitalization.

ISSUES/ACTIONS:

- Compressor testing is being conducted to fully understand compressor wear modes and life span.
- The electronic systems will have to be modified to accommodate new high-energy battery technologies that have 50 percent more electrical capacity.
- To minimize weight and noise the case will be integrated with the compressor mountings and the oxygen reservoir.
- The compressor and molecular sieve bed will have to be carefully optimized to achieve the goal weight of less than nine pounds.
- A modification of the existing Food and Drug Administration (FDA) documentation will be submitted for approval.

ADDITIONAL INFORMATION:

BPL # 436

DA PROJECT/TASK: Trauma Management –
PE/PROJ 643807/836JV

MAMP RANK: 12/36

ARMY ORD: A draft ORD has been initiated.

SCHEDULE:

Project Start	1QFY03
MS A/B	2QFY04
MS C	1QFY06

For additional information, contact: Applied Medical Systems, DSN 343-7582, Comm. 301-619-7582